BUILDING TRUST

PRODUCT DATA SHEET

SikaBiresin® L84

Laminating resin for manufacturing of high-performance molds

TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

Properties		SikaBiresin® L84 (A)	SikaBiresin® L84 (B)	SikaBiresin® L84 TP (B)
Chemical base		Epoxy resin	Amine	Amine
Color		Translucent	Colorless to transparent	Colorless to transparent
Mixing ratio	by weight by volume	100 100	25 26	24 30
Density	 cured	1.15 kg/l	1.1 kg/l 1.1 kg/l	0.92 kg/l 1.1 kg/l
Viscosity (CQP538-2 / BROOKFIELD LVT)	 mixed	1600 mPa·s	10 mPa·s 390 mPa·s	10 mPa·s 590 mPa·s
Pot life (CQP021-3 / Gel Timer TECAM)	500 g at 23 °C		40 minutes	60 minutes
Demolding time			24 hours	24 hours + post curing
Shore D hardness (CQP023-1 / ISO 868)			82 [A]	86 [A]
Flexural strength (ISO 178)			76 MPa [A]	131 MPa [B]
Flexural modulus (CQP027-2 / ISO 178)			3600 MPa [A]	3000 MPa [A]
Tensile strength (CQP036-1 / ISO 527)			87 MPa [A] 74 MPa [B]	73 MPa [B]
Impact resistance (CQP038-2 / ISO 179)			18 kJ/m² [A] 21 kJ/m² [B]	
Compressive strength (CQP028-5 / ISO 604)			118 MPa [A]	127 MPa [A]
Heat deflection temperature (CQP030-1 / ISO 75B)			100 °C [A]	110 °C [C]
Glass transition temperature (CQP301-5 / ISO 11357)			104 °C [C]	123 °C [D]
Shelf life		24 months	18 months	18 months

CQP = Corporate Quality Procedure

[A] curing condition: 23 °C for 14 days

[B] post curing: 80 °C for 2 hours

[C] post curing: 80 °C for 15 hours

[D] post curing: 100 °C for 12 hours

DESCRIPTION

SikaBiresin® L84 is a laminating resin for multi-purpose applications, e.g. manufacturing of high-performance molds of various types etc.

SikaBiresin® L84 is available with various hardeners to obtain different mechanical properties. For further information refer to the respective Product Data Sheet.

PRODUCT BENEFITS

- Multi-purpose applications
- Very good wetting properties for both reinforcing fibers and fillers
- High glass fiber and filler content are possible
- Good heat resistance and mechanical resistance, especially after post curing
- Extended pot life and higher heat deflection temperature with SikaBiresin® L84 TP hardener (B)

AREAS OF APPLICATION

SikaBiresin® L84 is designed for manufacturing of high-performance molds of various types with excellent heat and mechanical resistance.

The Product is suitable for manufacturing of many types of molds including laminated molds reinforced with either glass or carbon fibers.

It is well suited to produce heat resistant backstamped molds, models and negatives as well as vacuum forming molds.

The material can be used to manufacture highly filled polymer concrete.

This product is suitable for experienced professional users only.

METHOD OF APPLICATION

Surface preparation

The material and processing temperature shall be between 18 °C and 25 °C.
Make sure the mold or master model is clean, dry, dust and grease free.
If mold or master-model surface is porous, it must be properly sealed prior applying the release agent.
Wax-based release agents are recommended. For further information regarding Sika release agent consult the corresponding Product Data Sheet.

Mixing process

Prior to use check the material for homogeneity and crystallization.
After prolonged storage at low temperature, crystallization of components may occur. This process can be reversed by heating the affected component to a maximum of 70 °C until the crystals have disappeared. Allow to cool down to requested processing temperature before use.
Prior to mixing, component A must be stirred thoroughly.
Both components must be mixed homogeneously respecting the defined mixing ratio. The mixing can be performed with a spatula or a machine stirrer at ≤ 300 rpm.
To ensure a homogeneous and complete mixing, pour the mixed product into a new container and mix again shortly, considering the pot life.
Containers must be closed tightly immediately after use to prevent moisture ingress.
Once opened the Product shall be used as soon as possible.

Application

The fabric must be suitable for the use of epoxy resins.
For laminates glass fibres with binding twill are better than binding cloth because of its better suppleness.
SikaBiresin® L84 is applied to the selected fiber fabric (e.g. glass fiber mats) using a brush or hand roller.
SikaBiresin® L84 is applied quickly and easily due to its low viscosity. It will easily wet out fibres and incorporate high levels of fillers and powders with high binding force. Fibre laminates with thickness of more than 2 – 3 mm a break of 2 hours is necessary to remove temperature peaks. With hardener (B) SikaBiresin® L84 TP working without break is possible.
With hardener (B) SikaBiresin® L84 TP demolding is possible after room temperature curing of 24 hours and approx. 4 – 5 hours at 40 °C – 50 °C. Complete curing is achieved by post curing for approx. 15 hours at 80 °C.
If the surface needs to be further laminated or bonded, it is recommended to use a peel ply.
Ensure enough and adequate laminate to obtain the required form strength and to avoid deformation during demolding.
Further post curing of the demolded part can improve the final mechanical properties.
Depending on the geometry and weight of the part, it is recommended to use a conformer while post curing.

STORAGE CONDITIONS

Both components must be stored at temperature between 15 °C and 25 °C in original unopened containers.

FURTHER INFORMATION

The information herein is offered for general guidance only. Advice on specific applications is available on request from the Technical Department of Sika Industry.
Copies of the following publications are available on request:

- Safety Data Sheets

PACKAGING INFORMATION

SikaBiresin® L84 (A)

Pail	10 kg
Drum	220 kg

SikaBiresin® L84 (B)

Canister	2.5 kg 12.5 kg
Drum	50 kg

SikaBiresin® L84 TP (B)

Canister	15 kg
Hobbock	53 kg

BASIS OF PRODUCT DATA

All technical data stated in this document are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

HEALTH AND SAFETY INFORMATION

For information and advice regarding transportation, handling, storage and disposal of chemical products, users shall refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety-related data.

DISCLAIMER

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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